Resonant X-ray Emission Spectroscopy in High T_c Related Cuprates and Transition Metal Compounds

Akio Kotani
RIKEN/Spring-8 and Photon Factory/KEK

I talk about recent progress in the study of resonant X-ray emission spectroscopy (RXES) for (i) high T_c related cuprates and (ii) some transition metal compounds. Emphasis is put on the theoretical understanding of essential mechanisms for various interesting RXES experimental data, on the basis of calculations with a single impurity Anderson model and/or cluster model. For (i), three types of RXES spectra, Cu 2p-3d-2p RXES, Cu 1s-4p-1s RXES and O 1s-2p-1s RXES, are discussed first, and then a very recent study of Cu Kα RXES is introduced. For (ii), 2p-3d-2p RXES spectra for TiO_2, MnO and NiO are analyzed, and the behavior of d-d and CT (charge transfer) excitations is discussed.